

Date: Thu, 22 Sep 94 04:30:17 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V94 #317  
To: Ham-Ant

Ham-Ant Digest                      Thu, 22 Sep 94                      Volume 94 : Issue    317

Today's Topics:

2m antenna for apartment?  
2m vertical in my tree - how to?  
Discones as transmitting antennas  
Ham-Ant Digest V94 #313  
HF Loop antenna for sailboat??  
I need antenna matching software  
MFJ DUAL BAND MOBILE?  
RS twinlead antenna  
SAREX antenna design?  
Slinky antenna anyone?

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>

Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>

Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: 15 Sep 1994 16:26:02 GMT  
From: ihnp4.ucsd.edu!news.cerf.net!rosebud.sdsc.edu!news.tc.cornell.edu!  
news.cac.psu.edu!news.pop.psu.edu!ra!usenet@network.ucsd.edu  
Subject: 2m antenna for apartment?  
To: ham-ant@ucsd.edu

In article <35856q\$04@marlin.gulf.net> lester@marlin.gulf.net (Sean  
Lester) writes:

> I would like to build my own 2m/440 antenna. I live in  
> an apartment so it must be inside. I have a great location  
> near a window on the second floor in FL. Could anyone suggest  
> an antenna that is fairly easy to build and would give me good  
> results? As most hams, I have little \$\$\$ to invest.

>  
> [the rest deleted]  
>

If I recall correctly, the Radio Handbook by William Orr contains a design for a 2m/440 J-pole. I never tried building it myself since I don't own any equipment for 440 MHz.

One warning about building your own antenna: it might not be cost effective if you're going to build only one. I designed and built a ``plumber's delight'' J-pole a few months ago, and although I never added up the cost of all the materials, I think it probably cost me between \$30 and \$40 just to build the first one. The reason is that you typically have to over-buy materials. However, I later built one for my sister-in-law using the leftover pipe and plastic, so the cost per antenna obviously dropped.

For me, cost wasn't a consideration. I just wanted to experience the pleasure of building my own equipment. This, of course, is one of the best facets of the hobby. I'll also add that the 2 meter band is a good place to do antenna experiments since you don't need a lot of space to build and use an antenna that's efficient, and has respectable gain.

But if cost is the main consideration, here's my \$20 solution: Run to your nearest ham radio store and purchase the MFJ 2m/400 magnetic mount mobile antenna for about \$15. On the way home, stop by the food store and purchase a circular steel pizza cooking sheet. Stick the antenna in the center of the cooking sheet, and place the assembly on a table top, or in the attic. BTW, the top of a refrigerator makes an excellent ground plane at 2 meters, so you can skip the cooking sheet if you don't mind operating in the kitchen.

-Dave

--

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Acoustics Division, Code 7140                fax: (202) 404-7732  
Naval Research Laboratory  
Washington, DC 20375-5350    e-mail: drumhell@claudette.nrl.navy.mil

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Date: Wed, 14 Sep 1994 19:43:40 GMT  
From: newsflash.concordia.ca!CC.UMontreal.CA!IRO.UMontreal.CA!clouso.crim.ca!  
hobbit.ireq.hydro.qc.ca!barde!vaillan@uunet.uu.net  
Subject: 2m vertical in my tree - how to?  
To: ham-ant@ucsd.edu

In article 7t2@tequesta.gate.net, optronic@gate.net (Bob Bronson) writes:

>The highest point of my lot is an oak tree. It is a good 20' higher than  
>my roof peak. Two reasons for considering placement in the tree are: 1)  
>homeowners assoc. prohibits antennas on roof, & in tree it will be  
>somewhat hidden. 2) it's there and higher already. Has anyone made tree  
>installations? I would interested in hearing about it. I would expect a  
>slight loss being mounted against a 5-8" dia. live tree trunk compared to  
>free air. I'm looking at something like the Cushcraft ringo ranger 2  
>vertical. Thanks for any comments,  
>  
>Bob B. KE4PGM optronic@gate.net  
>

You can save your money and build a J-Pole with 300 ohms twinlead. I did that  
for a Fox Hunt here (Transmitter hunting). It hides very easy and you will  
be able to install it much higher in the tree. Try to hang it away from large  
branches; you will have less attenuation.  
Good luck Bob.  
73 de Clem, VE2HQJ

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Informatique scientifique	Tel:+1 514 652 8238 Fax:+1 514 652 8309
Int: vaillan@ireq.hydro.qc.ca	Radio-Amateur: VE2HQJ@VE2CRL.#MTL.PQ.CAN.NA

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Date: Thu, 15 Sep 1994 17:46:48 GMT  
From: ihnp4.ucsd.edu!news.cerf.net!rosebud.sdsc.edu!news.tc.cornell.edu!  
news.cac.psu.edu!howland.reston.ans.net!swiss.ans.net!malgudi.oar.net!chemabs!  
vjh21@network.ucsd.edu  
Subject: Discones as transmitting antennas  
To: ham-ant@ucsd.edu

Yea, finally a technical posting that I have a slim chance  
at posting an answer... :-)

NON active antennas no matter what configuration all share  
what I'm gonna call a resiprocity. What this means is the  
antenna has the same radiation characteristics when transmitting as it  
does when receiving.

Construction features that affect the reception pattern have  
the same affect on the transmission pattern.

Obviously, I'm not saying that you can use a 28 guage wire that works well  
as a receiving antenna for a high power transmitting antenna. Obviously

you can't because you are liable to melt the wire when you try to  
send your 1MW ATV signal down it :-)

By NON active I mean that you can't expect an antenna that has a built  
in pre-amp for reception of weak signals to work as a transmitting antenna  
providing 'gain' on your transmitted antenna.

I'll stand back and let the experts give a better reply.

--

Vince Herried (KA8CTE); From Bitnet: vjh21@cas.org or vjh21%cas.org@ohstmvs  
Chemical Abstracts Service (614) 447-3600 x 2877  
P.O. Box 3012, Columbus, OH 43210-0012

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Date: 21 Sep 94 17:48:43 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Ham-Ant Digest V94 #313  
To: ham-ant@ucsd.edu

Subject: Discones as transmitting antennas

pruth@ocvaxa.cc.oberlin.edu wrote:

: Here are a few questions for discone users. I have a  
: whip, since I've been told RS is in reality selling a  
: 'topless' discone, unlike the Diamond discone which has  
: the 'complete' discone with base-loaded vertical whip.  
: that is, how close to the horizon is it?  
: 2. Does the pattern change with frequency, and if so, how?  
: 3. Does having a vertical element affect this pattern?  
: 4. Should the vertical element be trimmed to work well  
: on 2M/70cm?  
: 5. Would I be better off simply removing the vertical element?  
: The ARRL antenna book has plans for a homemade discone, without  
: vertical element, and this leads me to suspect the vertical  
: element is for enhancing receive capability (for scanners)  
: I would very  
: much like to use the discone  
: for now as my primary 2M/70cm transceiving antenna, as well as  
: continue to use it as my scanner antenna. I've polled this  
: newsgroup recently about the discone vertical-element question  
: before.....  
: >>>stuff deleted <<<<  
: Thanks. --Bill KB8USZ

1. The discone is an antenna which exhibits low angle radiation /  
reception above the frequency for which it is designed. Addition  
of the vertical element atop the disk is intended to add response

to the structure at a lower frequency than that for which the structure responds. the additional element will add a narrow band peaked response to the antennas performance for the frequency at which it is tuned. It will probably add distorting responses to the pattern at harmonics of the frequency to which it is tuned.

2.The discone structure itself has a pattern which is independent of frequency over a broad range.

3. Yes the vertical element effects patterns and frequency at which the antenna may be used. The size of the discone determines the lowest frequency at which it will work as a broadband antenna. I first saw the antenna written up for ham use in a cq magazine anthology which referred back to a 1948 edition. That version was for use from below 20 meters up. If you address the structure and support of the disk adequately you could have a single antenna which could conceivably cover all ham bands with a constant impedance and gain. Also the center of radiation is based on the feedpoint's location.

4. For any frequency where the vertical element affects the performance of the antenna, the structure is not operating as a discone but as some sort of "corrupted ground plane antenna" You can make the structure function at frequencies for which the disk and skirt are not large enough but think of the structure as a ground plane antenna with a "funny/fat" vertical element. Note that the skirt may require extensions to provide adequate image response for the frequency to which the vertical element is resonated.

5. I have seen double discones ie a structure with a disk in the middle and the skirt structure repeated above the "hot" disk as well as below it. The advantage is 3 dbd gain at the expense of a mechanically unwieldy structure. Good frequency response for the scanner crowd but not very effective in terms of gain per buck/pound for the ham bands. The previous post regarding use of a J-pole ( which can be constructed as a multiband antenna ) or other vertically polarized antenna will offer more performance in terms of specific frequency/band communications.

6. Accepting the lower gain of the discone in exchange for its broad bandwidth performance you should certainly be able to use the discone for 2m/70cm if it performs well as a scanner antenna above and below those frequencies and can handle the power ( most likely ) that you will apply. Good luck in your experimenting.

\*\*\*\*\*  
\*        Opinions expressed are mine and not Rockwell's        \*

\* 73, K5VMU, Plano,Tx dale\_croft@comsys.rockwell.com \*  
\*\*\*\*\*

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Date: 21 Sep 94 09:14:07 -0400  
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!gatech!concert!  
hearst.acc.Virginia.EDU!alison.sbc.edu!grimm@network.ucsd.edu  
Subject: HF Loop antenna for sailboat??  
To: ham-ant@ucsd.edu

In article <CwF1zI.7HF@freenet.carleton.ca>, ar445@FreeNet.Carleton.CA (Fernand  
Charron) writes:

>  
> I am new with this newsgroup as well as a recently Ham (with full  
> privileges). I have a sailboat which I plan to sail down to the  
> Bahamas next year and will intall on it my Kenwood TS450. I  
> currently use a 20m dipole as an antenna on the boat and my  
> transceiver has an antenna tuner. I don't seem to be able to  
> transmit very strongly with this antenna even on 20 meters and  
> reception of distant stations is good while local stations are  
> usually weak.

My guess is that both your antenna and rig are working exactly  
as they should. What you are experiencing is perfectly normal  
for 20 Mx. Low power operation can be a real challenge on this  
band and it is generally used as a DX band rather than for  
local rag-chewing. For strong local signals, you would probably  
do better on 40 or 75 meters with the TS-50. Also, you should  
really expect only to operate on 20 with a dipole cut for the  
band. One thing that you do have going for you on 20 is the  
Maritime Mobile frequency...I think it is 14.313. You should be  
able to get an answer there even if you were running very QRP.

73,  
Ken

-----  
Kenneth D. Grimm  
grimm@alison.sbc.edu

K4XL

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Date: 21 Sep 1994 10:47:56 GMT  
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!EU.net!Germany.EU.net!  
news.dfn.de!kfk.de!rz.uni-karlsruhe.de!news.uni-stuttgart.de!  
moritz@network.ucsd.edu

Subject: I need antenna matching software  
To: ham-ant@ucsd.edu

I am afraid that a wswr of 1.05 is far beyond the limit of what can be measured correctly and what is really necessary for any transmitter around.

Bye for now, Moritz

-----  
Date: 21 Sep 94 09:53:29 EDT  
From: psinntp!main03!landisj@uunet.uu.net  
Subject: MFJ DUAL BAND MOBILE?  
To: ham-ant@ucsd.edu

In article <Pine.SUN.3.90.940920092008.1173D-100000@daffyduck>, Hugh Shane <shane@mdd.comm.mot.com> writes:

>  
> MFJ advertises a dual-band (2M/440MHz) mag mount for \$14.95. Is it any  
> good? (I don't think I could build my own so cheaply!)  
[...]

It's junk. You're better off with a handheld and a rubber duck. I bought one a while back, and promptly upgraded to a Comet B20 with a trunk lip mount. My car has a sunroof, so I can't drill. :( What a difference.

I've also compared the mag mount to a homebrew 440 ground plane. The GP wins easily (but it's harder to mount on a car!) It only makes sense if you want to use it temporarily, with a mobile rig. Otherwise, use your rubber duck.

--  
Joe  
landisj@drager.com

-----  
Date: Mon, 19 Sep 94 11:31:19 MST  
From: agate!news.ossi.com!news.fujitsu.com!amdahl!pacbell.com!tandem!UB.com!kaiwan.com!news.claremont.edu!nntp-server.caltech.edu!ferrari.mst6.lanl.gov!tesuque.cs.sandia.gov!lynx.@ihnp4.ucsd.edu  
Subject: RS twinlead antenna  
To: ham-ant@ucsd.edu

On Mon, 19 Sep 1994 16:50:04 GMT,  
Robert Adams <radams@cs.wmich.edu> wrote:

>In article <CwC450.34n@cs.dal.ca>,  
>Ross Frederick Blakeney <aa568@cfn.cs.dal.ca> wrote:

>>Hi, a little while back I noticed a posting about an antenna made with  
>>radio shack twin lead over some other kind, if the person who made the  
>  
>If you're talking about the Folded Dipole it was my post. It's twice as  
>broad as a single wire dipole... mine covers the entire 75m phone band  
>under 2:1. But, I wouldn't recommend Radio Shack's twin-lead or coax on  
>a bet.  
>  
>The radiator is made out of 120' of 450 ohm ladder line (the black plas-  
>tic stuff with "punched windows") and a 4:1 current-type balun. You can  
>order these from Radio Works (not "Shack") in Portsmouth, Virginia. Get  
>ladder-line with stranded conductors - it's stronger.  
>  
>To fabricate, simply cut one side of the 1-1 in the center and install  
>the balun. To keep strain off the joints you just soldered, tie a nylon  
>line through a "window" on either side to the top eye ring - taugtly.  
>Then, short each end of the 1-1 and install insulators. You're done!  
>  
>Feed it with 50 ohm coax. It's best installed as a shallow "V". Mine is  
>at 55' with the ends at 35'. Works like a banshee.  
>  
>Robert Adams, P.E.  
>radams@cs.wmich.edu  
>(616) 342-1303  
>  
> \* "FREE (the U.S. from) WILLY!" Vote Republican in November!  
>  
>  
Robert, I agree with your voting habits, but I am not convinced that your  
statements about the bandwidth of a folded dipole are correct. There is no  
reason for the bandwidth of a folded dipole to be wider than a normal DP  
made of the same size wire. In fact, full wave loops are generally  
somewhat narrower in bandwidth than DP structures. Try any of the popular  
antenna software to see the loop effect, not sure how to find out about  
folded dipoles except to measure them and be sure the balun is not too  
lossy as a lossy balun can make your SWR curve very broad (in the manner of  
a dummy load).

William Osborne                      505-646-3919  
Professor ECE Dept.                  PO BOX 30001, Dept. 3-0  
New Mexico State University      Las Cruces, NM 88003-0001

-----  
Date: 16 Sep 1994 19:47:13 GMT  
From: pa.dec.com!nntpd.lkg.dec.com!iamu.chi.dec.com!little@decwrl.dec.com  
Subject: SAREX antenna design?  
To: ham-ant@ucsd.edu



I'm trying to find the design for the antenna that has been used in some of the SAREX activities. As I understand it, it is placed in a window of the shuttle during operation. Does anyone know where I could find a copy or description of the design?

73,  
Todd  
N9MWB

-----  
Date: Tue, 20 Sep 94 15:56:52 GMT  
From: olivea!charnel.ecst.csuchico.edu!csusac!csus.edu!netcom.com!netcomsv!skyld!  
janguis@uunet.uu.net  
Subject: Slinky antenna anyone?  
To: ham-ant@ucsd.edu

In article <94255.170424JBAACK31@MAINE.MAINE.EDU> <JBAACK31@MAINE.MAINE.EDU>  
writes:

>  
> Hi all, I recently saw in an old QST issue, Oct.1980, to be precise,  
> a ad for a slinky style antenna for 80/75, 40 and 20 meters.  
  
> "looking for new ways to get that signal out..."

Well, the newer slinky toys don't work as well. Plastic instead of copper plated steel. But, boy howdy, are they \*colorful\*!

Amateur: WA6FWI@WA6FWI.#SOCA.CA.USA.NOAM | "You have a flair for adding  
Internet: janguis@skyld.grendel.com | a fanciful dimension to any  
US Mail: PO Box 4425 Carson, CA 90749 | story."  
Phone: 1 (310) 324-6080 | Peking Noodle Co.

Hate "Green Card Lottery"? Want to help curb ignorant crossposting on Usenet?  
E-mail ckeroack@hamp.hampshire.edu for more information, or read news.groups.

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End of Ham-Ant Digest V94 #317  
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